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**Synopsis of the MALACHIIDÆ of the United States.**

BY GEO. H. HORN, M. D.

The following synopsis of our Malachiidæ contains all the species known to me as inhabiting our territory. *Collops* is not included, as a descriptive catalogue has already been presented in the preceding volume of these Transactions.

The following table will enable our genera to be readily recognized. All the genera have eleven-jointed antennæ :

Anterior tarsi ♂ 4-jointed.

Head long; first joint of antennæ cylindrical.....**Trophimus.**

Head short; first joint of antennæ deformed.....**Temnopsophus.**

Anterior tarsi 5-jointed in both sexes.

Elytra very short; body apterous in both sexes.

Second joint of anterior tarsus ♂ prolonged over third.....**Endeodes.**

Elytra covering abdomen or nearly so.

Antennæ inserted on the front nearly between the eyes.

Second joint of anterior tarsus ♂ not prolonged.....**Malachius.**

Second joint slightly covering the third.

Head elongate.....**Tanaops.**

Antennæ inserted at anterior edge of front near the sides.

Anterior tarsus of male simple, joint 2 not prolonged.

Form elongate, legs long; females apterous.

Anterior tarsi ♂ stouter than in female.....**Microlipus.**

Form broad, legs moderate; female winged.

Anterior tarsi similar in the sexes.

Elytra similar in the sexes.....**Anthocomus.**

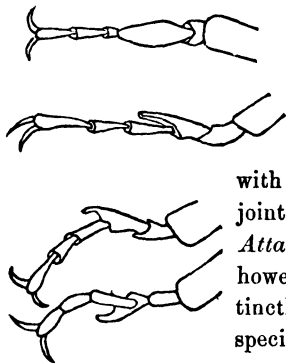
Elytra prolonged and appendiculate in ♂.....**Pseudebæus.**

Anterior tarsi with second joint prolonged over the third.

Elytra similar in the sexes.....**Attalus.**

In the above table *Malachius* includes *Hapalorhinus*; *Microlipus* includes also *Charopus*, sp. Lec. List; *Pseudebæus* contains the species under *Ebæus* in the List; *Attalus* includes *Acletus*, Lec. In the determination of the genera the course indicated by Duval has been followed. In a previous paper I intimated that some of our species of *Attalus* might be *Ebæus*, under the impression that the second joint was prolonged obliquely inwards. There appears to be a greater degree of motion between the second and third joints of the

anterior male tarsus than is usual among coleoptera, so that joints 3, 4 and 5 are frequently at right angles to the two preceding joints, while the prolongation of the second joint seems thus to be directed obliquely inwards. In every instance, however, the process is found to be canaliculate beneath for the reception of the third joint, and specimens of the same species are before me, some with the tarsal joints all in line, others with the last three oblique to the others. In the



accompanying diagrams the upper two cuts represent the anterior male tarsus of *Attalus* as seen directly from above and also from the side and slightly beneath. This is the form seen in our fauna. The

lower two cuts show the tarsus of *Ebæus* with the oblique prolongation of the second joint. *Acletus* does not essentially differ from *Attalus*. The process of the second joint is, however, shorter and the antennæ more distinctly serrate in the male than in the other species of *Attalus*, but these seem scarcely to warrant generic separation. As Duval observed

very little reliance can be placed on characters drawn from the extent of the coriaceous margin of the front, or from similar structure in the ventral segments.

*Microlipus* differs from *Charopus* in having the anterior tarsal joints of male nearly of equal size, and stouter than is usual in the group.

Of the genera above cited *Endeodes*, *Tanaops* and *Microlipus* are peculiar to the Pacific region, the first being found only along the sea-coast. *Malachius* contains one introduced species, four from the Pacific and one from Dakota. *Anthocomus* and *Pseudebæus* are peculiar to the Atlantic region. *Trophimus* and *Temnopsophus* have each but one species, while *Attalus* is found in every portion of our fauna, many of its Pacific forms assuming the elongate head of *Tanaops*.

#### **TROPHIMUS, Horn.**

*Trophimus*, Horn, Trans. Ent. Soc. 1870, p. 84.

**T. æneipennis**, Horn, loc. cit., p. 85.—Head elongated black, shining. Thorax reddish yellow with small black spot near middle of anterior margin. Elytra black with æneous tinge. Legs black. Length .12—.14 inch; 3—3.5 mm.

Collected in Colorado.

The genus *Trophimus* is the representative in our fauna of the European *Troglops* and *Homœodipnus*, but resembles more nearly *Cephalagonia* Wollast. as well in form as in most of its characters, it differs from the latter, however, in the third joint of the antennæ being shorter than the fourth and the first tarsal joint long. This genus and the following are the only ones with 11-jointed antennæ, in which the anterior tarsi differ in the sexes in the number of their joints.

**TEMNOPSOPHUS**, n. g.

Head short obtuse in front. Eyes prominent. Antennæ nearly as long as the entire body, eleven-jointed; first joint longer than the two following together, stout, very slender at base and with a short process from the anterior margin projecting inwardly; joints 2-10 equal, joint eleven longer than the tenth; insertion at the anterior margin of front. Maxillary palpi moderately long, first joint slender, second globular, emarginate on the proximal side to receive the third which is triangular and thick. Anterior tarsi four-jointed in the male. Elytra entire.



This represents in our fauna the genus *Colotes* of Europe, from which it may readily be distinguished by the form of the basal joint of the antennæ and the form of the palpi.

**T. bimaculatus**, n. sp.—Piceous, shining. Head piceous, anterior margin of front yellowish. vertex with slight linear impression, surface sparsely punctulate and finely alutaceous. Antennæ pale yellowish, tip darker. Thorax oval, in front broadly rounded, apex truncate, sides rounded in front and converging to apex, color piceous, shining, apex paler, surface punctulate and finely alutaceous. Elytra piceous with large yellow spot behind the humerus joining the margin which is also narrowly margined with yellow, apex pale testaceous gradually joining the darker color of the rest of the surface; form oval, rapidly widening behind; surface rather coarsely but sparsely punctured. Body beneath piceous. Legs pale brownish-testaceous, femora at base paler. Body winged. Length .08 inch; 2 mm.

The elytra are broadest near the apical three-fourths and are nearly twice as broad at this point as at base. The thorax resembles in form that of *Endeodes*.

One specimen ♂ in the cabinet of Mr. H. Ulke from Louisiana.

In the very greatly magnified representation the antennæ are much too short. The detached figure in front of the head is the maxillary palpus, the penultimate joint being concave to receive a corresponding convexity of the terminal joint.

### ENDEODES, Lec.

*Endeodes*, Lec. *Arcana Natura*, 1859, p. 122.

This genus is the only one in our fauna with the elytra so abbreviated as not to cover the greater part of the abdomen. Our species are found along the California sea coast, and may be known as follows:

Body entirely ferruginous.

Elytra opaque black, basal margin ferruginous.....**basalis**.

Body almost entirely black; thorax ferruginous; elytra black.

Head, antennæ and legs ferruginous.....**abdominalis**.

Head, antennæ and legs black.....**collaris**.

**E. basalis**, Lec. (*Atelestus*) Proc. Acad. 1853, 168.

This species is entirely ferruginous except the elytra which are opaque, nearly black, with the basal margin ferruginous and sometimes a narrow sutural and lateral space of the same color. Length .14 inch; 3.5 mm.

**E. abdominalis**, Lec. loc. cit.

In this species the abdomen, under posterior of body and elytra are black, the head, thorax, antennæ and legs ferruginous. It otherwise resembles the preceding. Length .14 inch; 3.5 mm.

**E. collaris**, Lec. loc. cit.—Head, antennæ, legs, elytra and abdomen black. Thorax red and more shining and usually broader than in either of the preceding species, with which it otherwise agrees in form. The black color has a slight tinge of blue. Length .14—.22 inch; 3.5—5.5 mm. (The latter measurement is that of an unusually large female.)

The genus *Endeodes* may be known by its short elytra, apterous body, five-jointed tarsi, the anterior pair rather shorter than usual and the second joint ♂ prolonged over the third, as in *Attalus*, and concave beneath. They were originally described as *Atelestus*.

### MALACHIUS, Fab.

*Malachius*, Fab. Syst. Ent. 1775, p. 207.

*Hapalorhinus*, Lec. Proc. Acad. 1859, p. 75.

Tarsi all five-jointed, simple in both sexes. Head short, antennæ inserted nearly between the eyes.

Our species may be thus arranged:

Antennæ serrate in the males.

Elytra simple at tip in the two sexes.

Second joint of antennæ similar in length and form to third.....**seneus**.

Second joint of antennæ much shorter than the third.....**biguttulus**.

Elytra appendiculate in the male..... **auritus**.  
Antennæ pectinate in the males.

Elytra appendiculate in the male..... **mirandus**.

Elytra not appendiculate in the male.

Elytra shining blue, tipped with yellow.....**mixtus**.

Elytra black..... **Ulkei**.

**M. seneus**, Linn. Fauna Suecc. 1761, 202; Erichs. Mon. 66.—The head and thorax are metallic green, the labrum and apical angles of thorax pale yellowish. The elytra are in great part red, with a common triangular metallic green space, including the entire base of the elytra, the sides converging to a point near the apex. The under surface is black with a metallic tinge and the legs similar in color to the thorax. Length .24—.32 inch; 6—8 mm.

Occurs in the New England States. An introduced species in our fauna.

**M. auritus**, Lec. Proc. Acad. 1852, p. 165.—Head and antennæ black. Thorax rufous with large discal black spot, occasionally with lateral margins only rufous. Elytra bluish, sub-opaque, rarely with a greenish tinge, surface with usually two indistinct costæ; tip in male, of similar color to the remainder of surface, appendiculate; female tipped with rufous. Under surface and legs black with faint metallic tinge. Length .20—.30 inch; 5—7.5 mm.

Occurs in California and Oregon.

**M. biguttulus**, Horn, Trans. Ent. Soc. 1870, p. 87.—Head and antennæ black. Thorax black, shining, with a tinge of green. Elytra metallic blue, shining, with a small yellow smooth spot on each near the apex. Legs and under surface black with a slight tinge of blue. Length .14 inch; 35 mm.

Resembles *mirandus* in form, but has a totally black thorax, more shining and not appendiculate elytra. In all our native species of *Malachius* the second joint of the antennæ in both sexes is smaller than the third and usually of an oval form.

One specimen from Fort Tejon, California.

**M. mixtus**, n. sp.—Head black, very shining, smooth and with a slight longitudinal impression within the antennæ. Antennæ black, strongly pectinate in the males and strongly serrate in the females. Thorax somewhat broader than long, very smooth and shining, black, lateral margin red. Elytra slightly broader at base than the thorax and feebly expanding to apex; color brilliant blue, shining, apices in both sexes tipped with reddish yellow; surface slightly scabrous. Under surface and legs black, with tinge of blue. Length .14—.18 inch; 3.5—4.5 mm.

Two specimens from California. The female resembles that of *auritus*, but is much more shining and has its antennæ very nearly as strongly serrate as those of the male of that species. From *mirandus*

it differs in its greater lustre and by the males of latter having the elytral apex appendiculate.

**M. mirandus**, Lec. (*Hapalorhinus*) Proc. Acad. 1859, p. 75.—Head black, front slightly impressed, smooth, shining. Antennæ black, strongly pectinate in the males, serrate in the females. Thorax smooth, shining black, sides and occasionally apex, broadly margined with yellowish red. Elytra scarcely shining, variable in color from ochreous to blue, frequently of the former color clouded with the later. Apex paler and smoother, appendiculate in the males. Body beneath black, tinged with blue. Legs black, hind tibiæ and middle knees yellowish. Length .16 inch; 4 mm.

There need be no difficulty in distinguishing this species from the preceding, by the color of the hind tibiæ alone, even in doubtful cases. In some unusually large specimens the aspect is that of *auritus*, but there are many characters serving to distinguish the latter.

This species is widely distributed in California, but most abundant at Fort Tejon on the flowers of various Leguminosæ.

**M. Ulkei**, n. sp.—Black, feebly shining, sparsely clothed with cinereous pubescence. Head black, with slight vertical impression. Antennæ black, strongly pectinate from the fourth joint, third joint triangular. Thorax broader than long, sides fully rounded, surface punctulate and sub-opaque, sides broadly margined with yellow. Elytra black, feebly shining, surface scabrous, sides parallel, broadly rounded at tip. Body beneath black, shining. Legs black. Length .14 inch; 3.5 mm.

Resembles *Anthocomus Erichsonii*, Lec., but has the pectinate antennæ inserted as in the other species of this genus.

One specimen from Dacota, kindly loaned, with many other species, by Mr. H. Ulke, to whom it is dedicated.

#### **TANAOPS**, Lec.

*Tanaops*, Lec. Proc. Acad. 1859, 74.

*Caphulistes*, Motsch. Bull. Mosc. 1859, pt. iv., p. 209.

This genus appears to occupy an intermediate position to the *Malachii* on the one hand and the *Attali* on the other, not only in the position of the antennæ but also in the form of the anterior tarsus of the male. The latter is described by LeConte as having the first two joints thicker than the following, and by Motschulsky as longer. Both of these facts are true, but the second joint is very distinctly prolonged over the third, although to a very slight extent. The two species vary in the structure of the abdomen.

**T. abdominalis**, Lec. Proc. Acad. 1859, p. 74.—Black with slight tinge of blue, shining, sparsely clothed with short black hairs. Head elongate, front slightly impressed, anterior margin of epistome membranous. Antennæ

black, ferruginous at base, serrate, longer than half the body. Thorax slightly broader than long and somewhat narrower in front, surface smooth shining, sides broadly margined with rufous. Elytra slightly broader behind, shining, surface punctulate and slightly wrinkled, color black with slight tinge of blue, lateral margin, apex and suture (except at base) margined with reddish-yellow. Legs black, femora and coxæ yellow. Length .16 inch; 4 mm.

*Male*.—Body beneath entirely yellow, sides of metasternum brown. Abdominal segments entire, the last three with reniform excavations deeper in the terminal which has also within the excavation a cup-like process. Second anterior tarsal joint prolonged slightly over the third.

*Female*.—Body beneath black, abdomen yellow. Abdominal segments, except the last two, interrupted at middle, terminal segment black.

Occurs in various parts of southern California.

**T. longiceps**, Lec. (*Malachius*) Proc. Acad. 1852, p. 165; (*Tanaops*) Proc. Acad. 1859, p. 74; *apicalis* Motsch. (*Cephalistes*) Bull. Mosc. 1859, iv., p. 409, pl. 4, fig. 28; *unicolor* Motsch. loc. cit. p. 410. Resembles the preceding in form and sculpture and differs as follows; Epistoma in front of insertion of antennæ membranous. Thorax totally black rarely with hind angles paler. Lateral margin of elytra near apex only, apex and suture at apical half rufous. Length .14—.16 inch; 3.5—4 mm.

*Male*.—Antennæ more distinctly serrate. Abdomen with last two segments with two rounded foveæ separated in a similar manner. Body beneath and legs black, anterior trochanters yellow.

*Female*.—Last two abdominal segments entire, penultimate elevated along the middle, anterior segments membranous at middle.

This species is variable in the extent of the paler margining of the elytra. The two species of Motschulsky are examples of this, and I have but little doubt in uniting them with the species of LeConte, which has but a few months' priority and was not known to Motschulsky.

Occurs with the preceding species in California.

*T. longiceps* and *abdominalis* may always be distinguished by the extent of the membranous margin of the epistoma, the former has the membrane extending to the point of insertion of the antennæ, so that the ring in front is incomplete, while the latter has the antennal insertion completely surrounded by a corneous ring although very narrow in front.

### MICROLIPUS, Lec.

*Microlipus*, Lec. Proc. Acad. 1852, p. 168.

**M. laticeps**, Lec. loc. cit.—Elongate, æneous black, moderately shining, finely cinereo-pubescent. Head with two frontal and one vertical impression, anterior portion of epistoma membranous, yellow. Antennæ black, three basal joints on the under side pale yellow. Thorax broader than long, subopaque, finely granulate and punctured, entire margin narrowly bordered with yellow. Elytra slightly rugose, greenish-black tipped with yellow, and not



appendiculate in the male. Body winged ♂, beneath and legs black, anterior and middle coxæ and bases of their femora yellowish. Length .14 inch; 3.5 mm.

Occurs in California. Males only known.

*M. (Charopus) uniformis*, Motsch. Bull. Mosc. 1859, iv., p. 405, described from the female, may possibly be identical with this one. The description applies quite well to what might be the female of *laticeps* excepting that no mention is made of the very fine thoracic yellow margin.

**M. lævicollis**, n. sp.—Elongate, bluish-green. Head shining, smooth, front feebly impressed. Antennæ black, four basal joints paler beneath. Thorax broader than long, black with tinge of green, smooth shining, margin at hind angles reflexed. Elytra parallel ♂, bluish-green, moderately shining, surface finely scabrous, apex tinged with yellow, but not appendiculate. Body beneath and femora black, shining, tinged with green, tibiæ and tarsi piceous. Length .14 inch; 3.5 mm.

One specimen from Nebraska in the cabinet of Mr. H. Ulke, easily distinguishable from all our species by the smooth and shining head and thorax. The thorax is proportionately broader than any of our species, unicolorous, and the margin more broadly reflexed at the hind angles.

**M. mœrens**, Lec. (*Charopus*) Proc. Acad. 1859, p. 283; (*Microlipus*) Class. Col. N. Am. p. 192.

This species resembles *laticeps* in color, sculpture and size, and differs in the thorax being somewhat larger, more narrowed behind and truncate at apex with the basal angle yellowish. The tips of the elytra are yellow and appendiculate in the males. The females are apterous and the sides of the elytra diverge toward the apex. The tips are broadly rounded not appendiculate nor yellow, and the surface less rugose than in the males. Length .12—.14 inch, 3—3.5 mm.

Occurs in California.

**M. longicollis**, Motsch. (*Charopus*), Bull. Mosc. 1859, iv., p. 405. Lec. (*Microlipus*) Class. Col. N. Am. p. 192.—Black, with slight tinge of blue, subopaque. Thorax longer than wide, sides nearly straight, converging to base which is nearly truncate, median broad band black, sides broadly rufous. Elytra elongate parallel, at tip yellowish and appendiculate in the males, broadly rounded in the females. Body beneath black, shining, with slight aseneous tinge. Length .14—.16 inch; 3.5—4 mm.

One specimen of each sex is before me from Motschulsky, by whom they were obtained from California.

From the short descriptions given it may be seen that the following table exhibits the differences between the species:

Elytra not appendiculate in the males.

Thorax finely punctured, sub-opaque, scarcely wider than long...**laticeps**.

Thorax smooth, shining, distinctly wider than long.....**laevicollis**.

Elytra appendiculate in males.

Thorax not longer than wide, its hind angles only yellow.....**mœrens**.

Thorax longer than wide, sides broadly rufous.....**longicollis**.

*Microlipus* resembles *Malachius* in form and general aspect, but the species are more slender and the legs longer. The antennæ are scarcely serrate and are inserted at the sides near the anterior margin of front. The sexual characters serve also as a means of readily distinguishing *Microlipus* from all the other genera of the tribe in our fauna.

### ANTHOCOMUS, Erichs.

*Anthocomus*, Erichs. Entomog. i., 1840, p. 97.

This genus may be distinguished from any in our fauna by its eleven-jointed antennæ inserted at the sides of the front, nearly or quite at the anterior margin; tarsi simple and similar in both sexes; elytra appendiculate in the males, not unlike those of the other sex in form.

There need be no difficulty in distinguishing the species of this genus from those of the next, as in the latter the species are all small, the epistoma much narrower between the insertion of the antennæ and the elytra of the males obliquely prolonged, tipped with yellow and with a hook-like process above.

**A. Erichsonii**, Lec. Proc. Acad. 1852, p. 165; *otiosus* † Er. Entom. p. 99; *lateralis*, Lec. loc. cit.—Head black with tinge of green, shining, front impressed. Antennæ piceous, under side of four basal joints testaceous. Thorax broader than long, sides broadly margined with yellow, median space black with tinge of green, surface sparsely punctulate and with few greyish hairs. Elytra parallel, black with bluish or fuliginous tinge, surface finely punctured and rugulose and sparsely clothed with cinereous hairs. Under surface and femora black, with slight greenish tinge, tibiæ, tarsi and anterior coxæ piceous. Length .14—,16 inch; 3.5—4 mm.

Abundant in the Middle States.

**A. flavilabris**, Say (*Malachius*), Journ. Acad. Ser. i., vol. v., p. 162; Lec. (*Anthoc.*) Proc. Acad. 1852, p. 166; *cæruleus* Rand. (*Malach.*) Bost. Journ. ii., p. 16.

Resembles the preceding species in form and size, but the color is more decidedly blue, and the thorax entirely unicolorous and nearly black.

Females only are known. Occurs from the Middle to the Eastern States.

**A. ventralis**, n. sp.—Head black, with greenish lustre, smooth, shining, front impressed. Antennæ piceous, basal joints beneath paler. Thorax one-half broader than long, smooth, shining, entirely yellowish-red. Elytra black, punctulate and finely rugose. Under side of thorax and abdomen yellow, metasternum black with tinge of green. Hinder legs entirely black, middle and anterior femora piceous, the under side testaceous. Length .14 inch; 3.5 mm.

Resembles the two preceding in form, but may readily be known by the entirely yellowish-red thorax and yellow abdomen.

Two specimens in Cabinet of Mr. H. Ulke, from Arizona.

### **PSEUDEBÆUS**, n. g.

In this genus must be placed all our species hitherto called *Ebæus*, one of them only having been known to Erichson. The reasons which have compelled me to confer a new generic name have already been given in the preceding portion of this essay. Having simple tarsi in both sexes it must be placed near *Anthocomus* from which it differs by the prolonged elytral apices always pale in the male and with an obtuse hook on the upper side. The same sex also presents peculiarities in the terminal segments, which will be adverted to in their proper places. Abdominal segments in both sexes entirely corneous.

The species are four in number, and may be distinguished in the following manner:

Last segment of abdomen ♂ yellow, deeply grooved longitudinally and deeply emarginate at tip.

Thorax yellow..... **apicalis**.

Thorax black..... **oblitus**.

Last segment of abdomen ♂ black, not grooved, slightly emarginate at tip.

Thorax yellow..... **bicolor**.

Thorax black..... **pusillus**.

**P. apicalis**, Say, (*Malachius*) Journ. Acad. Ser. i. v., p. 170; Erichs. (*Ebæus*) Entom. 119; *minutus* Mels. (*Malach.*) Proc. Acad. ii., 305.—Black with tinge of blue. Thorax and legs pale yellowish testaceous. Head piceous or black. Antennæ pale testaceous, terminal joints piceous. Thorax broader than long, sides gradually narrowed to base. Elytra slightly broader at base than thorax, gradually dilated behind, sinuate near the tip and prolonged in the male, broadly dilated and obtusely rounded at apex in the female. Body beneath black. Length .07 ♂, .09 ♀ inch; 1.75—2.25 mm.

*Male*.—Terminal abdominal segment yellow, prolonged, broadly and deeply channelled and deeply emarginate at tip.

*Female*.—Terminal segment one-half broader than long, sub-triangular.

Occurs in the Middle and Southern States.

The males are comparatively slender in their form and the apical fourth tipped with yellow. The females have the elytra much broader

and at the broadest part nearly equal to one and a half times the width of the base.

**P. bicolor**, Lec. (*Ebæus*) Proc. Acad. 1852, p. 167.—Similar to the preceding, but with the thorax more rounded on the sides, scarcely narrowed to base and shorter. Head yellowish-red but darker than the thorax.

*Male*.—Terminal abdominal segment black, not prolonged nor grooved, broadly emarginate at tip. Elytra yellow at tip.

*Female*.—Terminal segment broadly oval at tip.

Similar in size and color to *apicalis* and occurring with it.

**P. pusillus**, Say (*Malachius*) Journ. Acad. Ser. i. v., p. 170; Lec. (*Ebæus*) Proc. Acad. 1852, p. 167.

Resembles *bicolor* in form, but has the upper surface entirely black. Legs pale yellowish testaceous, femora at base piceous.

In sexual characters this species resembles *bicolor*, but the terminal segment in the male appears to be nearly rounded and not emarginate.

**P. oblitus**, Lec. (*Ebæus*) Proc. Acad. 1852, p. 167.

Color above totally black, antennæ at base and legs pale yellowish testaceous. Resembles *pusillus* in color, but has the thorax somewhat narrowed behind as in *apicalis*. Agrees with the latter also in its sexual characters, having the terminal abdominal segment of the male prolonged, channelled and deeply emarginate at tip, as well as pale yellowish testaceous in color.

Similar in size to *apicalis*. Occurs from Canada to Georgia.

### ATTALUS, Er.

*Attalus*, Er. Entom. i., 1840, p. 89.

*Acletus*, Lec. Proc. Acad. 1852, p. 167.

*Scalopterus*, Motsch. Bull. Mosc. 1859, iv., p. 406.

This genus is well defined in our fauna and may be distinguished from all those with similar antennal insertion by the dissimilarity of the tarsi in the two sexes; the second joint of the anterior tarsus of the male being prolonged *over* the third and grooved beneath. As has been already noticed in the beginning of this essay there exists a very great freedom of motion between the second and third joints so that while the first two joints may be in a line with the tibiæ the last three may be bent inwards at a right angle.

The species of this genus are numerous and difficult to separate, the following table will assist in their determination:

Head elongate (as in *Tanaops*) longer than wide. Front nearly flat.

Thorax entirely rufous.

Head entirely black; elytra sub-opaque.....**rostratus**.

Occiput only black; elytra shining.....**trimaculatus**.

**Thorax with median black space.**

Elytra shining, pale yellow, with broad black median vitta narrowed or interrupted at middle.....**oregonensis.**

Head broad, front convex.

Body above unicolored, black. (Exception made of a narrow pale margin at tip of elytra or base of thorax.)

Antennæ strongly serrate, or almost sub-pectinate ♂ ..... **nigrellus.**

Antennæ moderately serrate.

Lateral and apical margins of elytra bordered with a paler color.

Thorax with pale apical margin, apex of elytra bordered with testaceous.....**basalis.**

**Thorax entirely black.**

Apical margin bordered with a narrow yellow space,  $\delta$ . **terminalis.**

Apical margin livid testaceous, extending obliquely along the suture.....**varians.**

Lateral and apical margins not pale.

Legs all pale testaceous (species small broadly oval).....**granularis.**

Legs black, at least the middle and posterior.

Body black shining, legs and antennæ black.....**morulus.**

Body black, elytra sooty, front legs and clypeus pale....**pallifrons.**

Body above bicolored or almost entirely rufous.

Head and thorax concolored, pale rufous.

Elytra entirely black, shining.....**melanopterus.**

Elytra pale rufous with small humeral black spot..... **humeralis.**

Elytra pale rufous with an apical and basal black spot.

Tibiæ and tarsi black. Elytra dull..... **parallelus.**

Tibiæ and tarsi pale yellowish. Elytra shining..... **Pettiti.**

Elytra bluish-black, suture and apex rufous.....**rufiventris.**

Head black, thorax either margined, entirely rufous or nearly black.

Elytra entirely black. Thorax usually entirely rufous.

Legs entirely black. Elytra shining.....**nigripes.**

Anterior and middle tibiæ pale. Elytra sooty.....**otiosus.**

Elytra black, margin of suture pale or rufous.

Thorax with discal black spot. Elytral limb and suture narrowly bordered with yellow.

Abdomen black.....**circumscriptus.**

Abdomen rufous.....**rufiventris** var.

Thorax in great part black.

Abdomen pale yellow.....**cinctus.**

Abdomen black..... } **difficilis.**  
 } **lobulatus.**

**Elytra livid testaceous.**

Suture and margin often black..... **scincetus.**

From the above table the only known species omitted is *A. (Scalopterus) rufomarginatus*, Motsch. Bull. Mosc. 1859, iv., p. 406; a species from California resembling in general aspect *Tanaops abdominalis*, Lec., and possibly closely allied to *A. oregonensis*.

In the "List," p. 53, LeConte notes *A. flavifrons*, Lec. There is no

such species described, but in Dejean's Catalogue, edit. iii., p. 122, may be found *Anthocomus flavifrons*, to which LeConte makes reference, Proc. Acad. 1852, p. 165, without, however, adding any description. There is but the merest wreck of a specimen bearing this name in LeConte's Cabinet, and it appears to be merely *Anthocomus Erichsonii* with a rufous front. At all events the name should be entirely dropped until the species to which the name is applicable shall have been described.

An examination of the above table will show two very well defined groups into which the genus is primarily divided. The first resembles *Tanaops* in many of its characters and indicates to the student the difficulty of defining genera with any great degree of accuracy in this family. In the group with broader and shorter heads the tendency is toward *Malachius*, although in this direction other points of difference occur, that render the separation, much easier of definition.

**A. rostratus**, n. sp.—Head black, shining, very sparsely punctured, in length greater than the thorax, and one-half longer than broad. Antennæ black, two basal joints piceous, longer than the head and thorax. Thorax pale rufous, one-third broader than long and slightly broader behind, sides feebly arcuate, base less so, margin reflexed behind and at base, and narrowly colored with black, surface shining. Elytra at base broader than thorax, sides gradually divergent behind, surface sparsely punctured and feebly rugose; color in great part blackish with lateral margin, apex and suture except at basal third pale yellowish. Body beneath and legs black shining; thorax beneath and abdomen pale rufous, terminal joint of latter black. Length (including head) .18 inch; 4.5 mm.

The head and thorax together are shorter than the elytra. The surface above and beneath is sparsely clothed with short black hairs. The form of elytral marking is very common in our species and the relations of the pale margin and black enclosed space are variable. In most species the black is reduced to a stripe, very narrow and sometimes divided at middle so as to form four spots, and in this case the sutural pale space is apt to extend to the base.

One specimen from Keyesville, California, found feeding on the flowers of *Æsculus*.

**A. trimaculatus**, Motsch. (*Scalopterus*) Bull. Mosc. 1859, iv., p. 407; *elegans*, Horn, Trans. Am. Ent. Soc. 1870, p. 86.

I have no doubt that the species described by me is the same as that described by Motschulsky. It may easily be distinguished from any of our species by its elongate head with the front rufous and the vertex and occiput black, the rufous thorax and the more shining

surface. The elytral spots are well defined and in all my specimens are the same, consisting of a broad but short common scutellar black spot, and an oval spot near the tip equidistant from apex, margin and suture. It is also more slender than any other of our species. Length .16 inch; 4 mm.

Occurs with the preceding and is not rare.

**A. oregonensis**, n. sp.—Head black, anterior margin of front rufous. Thorax slightly broader than long, slightly narrower behind, varying in color from rufous with median black space, to nearly black with margins and basal angles narrowly rufous; surface shining. Elytra shining, slightly rugulose, pale yellowish with median black vitta on each, broader at base and apex and very narrow at middle. Legs black, femora at basal half testaceous; thorax and abdomen beneath pale yellowish, the latter tipped with black. Length .10 inch; 2.5 mm.

The markings of the elytra vary as is indicated in the remarks under *rostratus*, the majority of the specimens have the black vitta almost divided and in one specimen in which the thorax is nearly black, the yellow margin is reduced to a minimum.

Collected in Southern Oregon, by Mr. Wm. M. Gabb.

**A. nigrellus**, Lec. (*Acletus*), Proc. Acad. 1852, p. 167.

I cannot find any valid differences between the type of this species and the genus *Attalus*. The antennæ have joints more acutely triangular with the angles more prolonged than is usual in the genus. The second tarsal joint is oblique to those following it in the unique before me, but the position is merely one of accident, such as has already been referred to.

The species is totally black with feeble lustre. The thorax broader than long, the angles all rounded, the hinder slightly reflexed. The elytra are sub-parallel and somewhat rugose as in many of the species. Length .12 inch; 3 mm.

Occurs in the Lake Superior region.

**A. basalis**, Lec. (*Anthocomus*), Proc. Acad. 1852, p. 166; Lec. List (*Attalus*), p. 54.—A small piceous black, shining species, almost as much dilated behind as *granularis*, with the base of the thorax margined with yellow. In the male the apex and a small portion of the sides and suture are also bordered with yellow. Legs varying from piceous to testaceous. Body beneath black. Length .06 inch; 1.5 mm.

Occurs in the Colorado Desert and Lower California.

**A. terminalis**, Er. (*Anthocomus*), Entom. p. 108; Lec. (*Attalus*), List, p. 54; *hæmorrhoidalis*, Motsch. (*Scalopterus*) Bull. Mosc. 1859, iv., p. 408.—A small species totally black above, shining and sparsely pubescent. The tips of the

male elytra and a narrow space along their sides, not attaining the humeri, are bordered with yellow. The legs are black, except usually the anterior pair and frequently the middle tibiae which are pale testaceous. Length .10 inch; 2.5 mm.

Occurs in the Middle and Southern States.

**A. varians**, n. sp.—Piceous, shining, sparsely pubescent. Head black shining, anterior margin of front testaceous. Antennae brownish testaceous. Thorax broader than long, sides feebly rounded, slightly narrowed to base which is broadly rounded; color black, shining and nearly smooth. Elytra slightly wider at base than thorax, sides divergent, color piceous, lateral margin, tip and apex of suture pale yellowish testaceous. Body beneath piceous. Legs pale yellowish testaceous, hind femora piceous. Length .08—.10 inch; 2—2.5 mm.

In this species the elytra are piceous, the tips pale testaceous with the latter color extending along the suture without involving the margin. In two specimens before me there is in addition to the apical space a juxta-sutural small spot a short distance behind the scutellum. There need be no difficulty in distinguishing this from the forms of *scincetus* as in the latter the hind angles of the thorax at least are margined with yellow and the livid color of the elytra is reduced to an oblique vitta extending from the humerus to the apex of suture. In one specimen of *variens* the elytra are entirely piceous except a very narrow lateral and apical margin.

Occurs in Texas and Louisiana. Three specimens in the Cabinet of Mr. H. Ulke.

**A. granularis**, Er. (*Anthocomus*), Entom. i., p. 112; Lec. (*Attalus*), List, p. 54.

Our smallest species, easily known by its broadly oval form, the elytra of the female being very nearly as broad as long. Color piceous. Legs pale testaceous. Length .04—.06 inch; 1—1.5 mm.

Occurs only in the Southern States.

**A. morulus**, Lec. (*Ebæus*), Proc. Acad. 1852, p. 167.—Totally black, shining, and with very little pubescence. The abdomen is piceous, the segments at their margins paler. Legs piceous or black, the anterior pair somewhat paler. Length .10 inch; 2.5 mm.

This species is widely distributed, occurring from Canada to District of Columbia and thence westward to Kansas.

**A. pallifrons**, Motsch. (*Anthocomus*), Bull. Mosc. 1859, iv., p. 408; Lec. (*Attalus*) List, p. 53.—A more elongate species than the preceding, with the head and thorax alone shining; elytra sub-opaque and with a sooty appearance and distinctly pubescent. The anterior margin of front and rarely the hind angles of the elytra are testaceous. Anterior legs pale testaceous, middle and hind femora piceous and their tibiae paler. Length .14 inch; 3.5 mm.



Very distinct by the characters given in the table and is more slender than is usual in the broad headed group of the genus.

Its geographical distribution corresponds with the preceding.

**A. melanopterus**, Erichs. (*Anthocomus*), Entomog. i., p. 110.—Head, thorax and abdomen pale rufous. Elytra and body beneath black. Legs pale rufous, hind femora at tip piceous. Surface shining and scarcely pubescent. Length .10 inch; 2.5 mm.

A very distinct species of which I have seen but one specimen in the Cabinet of Mr. Ulke.

Occurs in Tennessee.

**A. humeralis**, Lec. New Species, p. 94.—Pale rufous. Antennæ brownish at tip. Elytra with small humeral black spot. Pectus piceous. Anterior and middle legs pale rufous, hind legs piceo-testaceous. Length .12 inch; 3 mm.

The above characters will readily distinguish this from any known species.

One specimen from Illinois.

**A. parallelus**, n. sp.—Form parallel, sub-cylindrical, sparsely pubescent. Head rufous, front slightly impressed, shining. Antennæ piceous, under side of basal joints paler. Thorax rufous with small black spot at middle of anterior margin, one-third broader than long, sides and hind angles broadly rounded, surface shining. Scutellum rufous. Elytra parallel, scarcely broader at base than thorax, surface sub-opaque, rufous, with humeral and sub-apical spot black. Body beneath rufous, metasternum piceous. Legs black, under side of anterior and base of hinder femora pale testaceous. Length .12 inch; 3 mm.

This species is readily known by its coloration and its parallel form, all our other species being more or less dilated behind.

One specimen collected in central Texas, by Mr. Belfrage.

**A. Pettiti**, n. sp.—Head rufous shining, front slightly impressed. Antennæ piceous, basal joints paler. Thorax rufous, shining, broader than long, sides and base conjointly arcuate. Elytra broader at base than thorax, dilated behind, rufous, shining and with humeral and large apical spot black. Body beneath pale rufous, metasternum black. Legs pale rufo-testaceous, hind femora, except at tips, piceous. Length .08 inch; 2 mm.

A species recalling *trimaculatus*. The elytra are more black than rufous and might be described as "black with suture, apical margin and transverse band in front of middle rufous."

It may be known from the preceding species by the more shining surface and the elytra dilated behind as is usual in the genus.

One specimen in my cabinet from Canada, presented by Mr. Johnson Pettit.

**A. rufiventris**, n. sp.—Head rufous, shining. Antennæ piceous with the four basal joints paler beneath. Thorax rufous, shining, one-third broader than long and slightly narrowed in front, sides rounded, base more broadly rounded. Elytra bluish-black with slightly glaucous lustre, very sparsely pubescent; entire suture and apex margined with rufous. Body beneath pale rufous, metathorax and tip of abdomen black. Anterior femora beneath, and bases of the other femora testaceous, tibiae and femora piceous. Length .12—.16 inch; 3—4 mm.

*Variety*.—Occiput and narrow median thoracic stripe black.

This species resembles *circumscriptus*, but may be distinguished at all times by the rufous abdomen. In some specimens the occiput and narrow discal thoracic space are black, increasing by this variation the resemblance between the two. Rarely the sides of the elytra have a very narrow rufous margin, but never extending to base.

Occurs from Ohio to Texas.

**A. nigripes**, Horn, Trans. Am. Ent. Soc. 1870, p. 85.

The description of this species having been published so recently it is hardly necessary to recapitulate. It is more slender than *otiosus*, more shining and with entirely black legs. Length .08—.10 inch; 2—2.5 mm.

Occurs in Colorado.

**A. otiosus**, Say. (*Malachius*), Am. Ent. (Edit., Lec.) vol. i., p. 109, pl. 48, fig. 3; *nigripennis* || Say, Journ. Ac. iii., p. 184; *nigripennis*, Er. (*Anthocomus*), Entom. 108; Lec. (*Attalus*), List, p. 53.—Body black, abdominal segments margined with testaceous. Head black, anteriorly pale yellow. Thorax pale rufous, rarely with a narrow median black stripe. Elytra black, sparsely pubescent and feebly shining. Anterior legs and under side of middle femora pale testaceous, middle tibiae and hind legs piceous. Length .12 inch; 3 mm.

A rather robust form widely distributed over our Atlantic region. The original name under which it was described might with propriety be restored in the present genus, although some confusion might arise, as it is already so widely known under the name subsequently suggested by the original describer.

**A. circumscriptus**, Say. (*Malachius*), Journ. Acad. iii., p. 185; Erichs. (*Anthocomus*), Entom., p. 107; Lec. (*Attalus*), List, p. 53.—Body black. Head black, labrum pale testaceous. Thorax with large discal black spot, margins pale testaceous. Elytra black, sub-opaque, lateral and apical margins and suture bordered with yellow. Anterior and middle femora pale beneath, above piceous; anterior tibiae testaceous; middle tibiae and hind legs piceous. Length .12 inch; 3 mm.

This species appears to be almost entirely confined to the extreme Southern States. The characters in the table and those above briefly given will distinguish it from any of our species.

**A. cinctus**, Lec. (*Anthocomus*), Proc. Acad. 1852, p. 166; (*Attalus*), List, p. 53.—Black, abdomen pale yellow. Head black, anteriorly pale yellow. Thorax black, shining, base narrowly margined with yellow. Elytra black, slightly pubescent, lateral and apical margins and suture narrowly bordered with yellow. Legs pale yellowish testaceous. Length .12 inch; 3 mm.

Occurs near Fort Yuma, California.

**A. difficilis**, Lec. (*Anthocomus*), Proc. Acad. 1852, p. 166; (*Attalus*), List, p. 54.

Closely allied to the preceding and differs as follows: Body beneath and abdomen black. Thorax at base and sides narrowly bordered with yellow. Elytra black, glaucous, not (?) pubescent, suture at base, apex and lateral margin near humerus bordered with yellow. Legs as in *circumscriptus*. Length .14 inch; 3.5 mm.

Occurs with the preceding.

**A. lobulatus**, Lec. List, p. 54; *lobatus* || Lec. (*Anthocomus*), Proc. Acad. 1852, p. 166.

One of our smallest species, closely allied to the preceding two, but rather more slender and with the sides of the elytra, apex and suture more broadly margined with yellow. The head is sometimes totally black, and the thorax at sides more broadly yellow. The legs are pale testaceous. Length .07 inch; 2 mm.

Occurs on the borders of the Colorado Desert of California.

**A. scincetus**, Say, (*Malachius*), Journ. Acad. v., p. 170; Erichs. (*Anthocomus*), Entom. p. 109; Lec. Proc. Acad. 1852, p. 166; Lec. (*Attalus*), List, p. 54; *infuscatus*, Motsch. (*Scalopterus*), Bull. Mosc. 1859, iv., p. 407.

A species easily known by its livid testaceous color. Head usually black, anteriorly testaceous. Thorax with discal spot black. Elytra livid, suture and lateral margins often brownish. Body beneath and legs yellowish, metasternum black. Length .12 inch; 3 mm.

The sutural and lateral brownish spaces become at times broader so that the pale color is reduced to a narrow oblique stripe from the humerus to apex, and in this case forms the variety *infuscatus*.

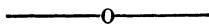
Rather abundant over our entire territory east of the Rocky Mountains.

One species I have not been able to place in any of the preceding genera.

**Ebeus submarginatus**, Lec. Proc. Acad. 1852, p. 167; List (*Ebeus*?) p. 54.—Longiusculus, æneo-niger, tenuiter pubescens, thorace subtiliter alutaceo, non transverso, versus basin angustato, basi rotundata obsolete rufescente, elytris vix dilatatis depressiusculis, obsolete rugosis, abdomine brevioribus. Long. .06 unc.; 1.5 mm.

One specimen, Colorado River, California. The antennæ and tibiæ are testaceous at base.

The specimen from which the above description was drawn is a female and remains unique. It does not resemble any of the genera in our fauna. The form of thorax is that of *Endeodes* or *Temnopsophus*. I prefer calling attention to it as of a doubtful genus to placing it (with views to the contrary) in any genus in our fauna.



### The BRENTHIDÆ of the United States.

BY GEORGE H. HORN, M. D.

The species are few within our faunal limits, and no territory in the world of equal size is probably as poorly represented in this family. One species only inhabits the United States and the portion of the Continent to the north, the remaining species being from the peninsula of Lower California and resemble those from the adjacent regions of Mexico, and are inserted in the present paper to render our knowledge of the fauna of that region more complete.

Two genera occur in our fauna, representing two groups as defined by Lacordaire.

Thorax convex above, not channelled..... **Eupsalis**.  
 Thorax depressed, deeply channelled..... **Brenthus**.

#### EUPSALIS, Lac.

Lacordaire, *Genera* vii., p. 430.

This genus represents the *Arrhenodides* of Lacordaire, distinguished by the conical thorax not compressed in front, the antennæ moderately robust, but not terminated by a club. Head transverse, mandibles prominent. Among the genera of the group, *Eupsalis* is known by its short and broad rostrum, the broad head, the femora slender and cylindrical at base. It is closely allied to *Arrhenodes*, in which our species had been placed, but differs by the hind angles of the head being effaced, and the surface shining.

**E. maxillosus**, Oliv. (*Brentus*) Ent. v. 84, p. 443, No. 17, pl. 1, fig. 1. c ♂, also, pl. 2., fig. 17, a ♂, b ♀. Lac. (*Eupsalis*) loc. cit; *septentrionis* Hbst., (*Brentus*) Col. vii., p. 183, No. 5, pl. 107, fig. 5, ♂.—Color variable from nearly black to rufous. Thorax oval slightly longer than broad, apex truncate, sides gradually divergent, base constricted; surface smooth convex, very sparsely punctulate. Elytra robust, more than twice as long as wide, slightly narrow-